

EXHIBIT 1

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 Glycerol monostearate (40%) - Hudong Products, CAS#: 123-94-4, 11099-07-3, 31566-31-1 (Glycer... Page 1 of 2

ANNEX 1

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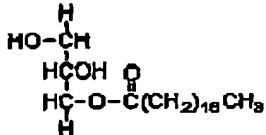
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:: Food Additives

- > Glycerol monostearate
- > Glycerol mono- and distearates
- > Glycerol triesteareate
- > Sodium gluconate /
- > Potassium gluconate
- > Mixed decanoyl and octanoyl glycerides
- > Mono decanoyl octanoyl glyceride
- > Emulsifying stabilizer for dairy products

:: Plastic Lubricants

- > PVC External Lubricant G708
- > PVC External Lubricant G78
- > PVC Internal Lubricant G168
- > PVC Internal Lubricant G80

Glycerol monostearate (40%)

Product Name: Glycerol monostearate (40%)

Synonyms: Glycerol monostearate; Glycerin monostearate; Stearic monoglyceride; Monostearin; GMS

Chemical Name: Stearic acid glycerol monoester

CAS Registry Number: [123-94-4; 11099-07-3; 31566-31-1]

Molecular Formula: C₂₁H₄₂O₄

Molecular Weight: 358.56

Specifications:

Appearance	White flakes or powder
Monoester, %	40 min.
Iodine value (g I ₂ /100g)	2.0 max.
Acid value (mg KOH/g)	2.0 max.
Saponification value (mg KOH/g)	160 - 175
Freezing point, °C	65 - 80
Soap content, %	2.0 max.
Arsenio (as As), ppm	3 max.
Heavy metals (as Pb), ppm	10 max.



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Iron (Fe), ppm 10 max.

Applications: A lipophilic non-ionic surfactant with HLB of 3.6 - 4.2. It has effects of emulsification, dispersal, foaming, defoaming, starch anti-aging and fat agglomeration and is widely used in foodstuffs, cosmetic, medicine and plastic processing industries. It is emulsifier used the most widely and in the largest quantities in the foodstuff industry.
Packaging: 25 Kg per sack (flakes of powder), or 25 Kg per carton (lump).
Storage: Stored in dry and cool places. **Shelf life:** 1 year.

Inquiry for Glycerol monostearate

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"Fatty esters"

Kao Corporation, Chemical Business Division

Fatty esters 4.(1)

november 2003

EXCEL series

Glycerol fatty acid esters

1. Description, and Specification

□(2)(Appearance, Color, Acid value, Saponification value, Iodine value, Hydroxyl value)

Product name	Description	Specification					
		Appearance (at 25 °C)	Color (*: when molten)	Acid value	Saponification value	Iodine value	Free glycerin content (%)
EXCEL T-95	Glycerol monostearate	White beads	APHA 200 max. *	2 max.	155 to 165	2 max.	2 max.
EXCEL T-95 POWDER	Glycerol monostearate	White powder	APHA 200 max. *	2 max.	155 to 165	2 max.	2 max.
EXCEL VSMJ95	Glycerol monopalmitate /stearate	White beads	APHA 200 max. *	2 max.	Ester value 155 to 165	2 max.	2 max.
EXCEL	Glycerol	White	APHA	3		75 to	

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O-95R	monooleate	waxy solid	200 max. *	max.	-	-	85	2 max.
EXCEL P-40	Glycerol monostearate and distearate	White powder	Gardner 3 max. *	3 max.	-	-	3 max.	4 max.
EXCEL P-40S	Glycerol monostearate and distearate	White powder	Gardner 3 max. *	3 max.	163 to 173	-	-	5 max.
EXCEL 122V	Glycerol monostearate and distearate, monooleate and dioleate	Light yellow paste	Gardner 5 max. *	3 max.	-	-	-	1.5 max.
EXCEL 200	Glycerol monostearate and distearate, monooleate and dioleate	White powder	APHA 300 max. *	3 max.	-	-	14 to 18	-
EXCEL 300	Glycerol monooleate and dioleate	Light yellow liquid	Gardner 5 max.	2 max.	140 to 160	55 to 70	-	-

2.Specification(Total monoglyceride content, Melting point) HLB, Viscosity, Solubility,
EINECS No. and Packing

Product name	Total monoglyceride content(%)	HLB	Melting point (C)	Viscosity (mPa.s)	Solubility ⁽¹⁾ (10% sol. at 25 C)				SP value (2) (Hoy) [(MPa) 1/2]
					Water	Ethanol	n- Hexane	Xylene	
EXCEL T-95	95 min.	3.8	63 to 68	80 C 28	I	D	I	D	17.55
EXCEL T-95 POWDER	95 min.	3.8	63 to 68	80 C 28	I	D	I	D	-
EXCEL VS 03 95	95 min.	3.8	63 to 68	-	I	D	I	D	-

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V80)95											
EXCEL O-95R	93 min.	3.5	36 to 40	-	I	S	I	S	19.13		
EXCEL P-40	45 min. (alpha-MG ⁽⁴⁾)	2.8	50 to 60	80 C 21	I	I	I	D	-		
EXCEL P-40S	35 min. (alpha-MG)	2.8	55.5 to 59.5	80 C 26	D	I	I	D	-		
EXCEL 122V	52 min. (alpha-MG)	3.0	-	60 C 42	I	H	D	H	-		
EXCEL 200	79 min.	3.5	54 to 60	74 C 29	I	D	I	D	-		
EXCEL 300	43 to 53 (alpha-MG)	2.8	-	30 C 122	I	S	S	S	17.80		

(1) Solubility S: Clearly soluble, H: Hazy, D: Slightly soluble, I: Insoluble, G: Gel

(2) SP value: $1.00(\text{Mpa})^{1/2} = 2.046(\text{cal/cm}^3)^{1/2}$

(3) All products are registered on TSCA.

(4) alpha-MG: alpha-monoglyceride

3. Usage

Emulsifier and additive for foods; EXCEL T-95, T-95 POWDER, VS-95, O-95R, P-40, P-40S, 122V, 200, 300

Emulsifier for spin finishes and oiling agent for textile; EXCEL T-95, T-95 POWDER, VS-95, O-95R, P-40, P-40S, 122V, 200, 300

Antifogging agent for plastic films, plastic lubricant; EXCEL T-95, T-95 POWDER, VS-95, O-95R, P-40, P-40S, 122V, 200, 300

Antistatic agent for plastics; EXCEL T-95, T-95 POWDER, VS-95, O-95R, P-40, P-40S, 122V, 200, 300

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